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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/576,727	05/23/2000	Chad A. Cobbley	3639.1US (97-1383.1)	3108

7590

11/14/2002

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EXAMINER

TRINH, MINH N

ART UNIT

PAPER NUMBER

3729

DATE MAILED: 11/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/576,727

Applicant(s)

COBBLEY ET AL.

Examiner

Minh Trinh

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 and 26-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 18-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of invention I, claims 1-8 and 18-25 in Paper No. 5 is acknowledged.
2. Claims 9-17 and 26-33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.
3. The abstract of the disclosure should be revised to read on method invention. Correction is required. See MPEP § 608.01(b).

Drawings

4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show "stencil plate areas" as described in claims 5 and 22. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 3729

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-8 and 18-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear whether the recites "apparatus" (claim 1, line 1) is same as "apparatus" of line 10?

It is also not clear if "a plurality of conductive spheres"(claim 1, line 1) is the same as "a plurality of conductive spheres" of line 4?

The phrase: "the first pattern are greater than the diameter of said spheres by up to 1mm" is indefinite and confusing applicants need to be specific because it is not clear as to exactly associated element in which the diameter is greater than the diameter of each of the spheres. In this case, it appears that applicants are referred to the associated holes of the first pattern.

As applied to claim 18, is "an apparatus "(line 1) is the same as "apparatus"(line 12); "a plurality of conductive spheres"(line 1) is the same as "a plurality of conductive spheres"(line 6); "a substrate" (lines 1-2) is the same as "a substrate" (line 7), etc.

Claim Rejections - 35 USC § 102

8. The following is a quotation of 35 U.S.C. 102(b) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3729

8. Claims 1-4, 6-8, 18-21 and 23-25 as best understood, are rejected under 35 U.S.C. 102(b) as anticipated by Kirby et al (US 5,431,332).

Kirby et al disclose an apparatus for placing a plurality of conductive spheres on a substrate comprising: a stencil plate 16 with upper and lower surfaces and a first pattern of plurality of through holes 18, said stencil plate configured to place a plurality of conductive spheres 30 in said first pattern on a approximate surface of the substrate 4 (see Figs. 7-8); a hopper 26 extending across at least a portion of the upper surface of said stencil plate 16 and proximate thereto (see Fig. 2, col. 2, lines 58-59). It is noted that Kirby et al inherently disclose the hopper 26 having a bottom opening with a dimension extending across the first pattern for dispersing or pouring said sphere into the through holes 18 of the stencil plate 16 and a hydraulic cylinder 23 (see Fig. 1) for moving the hopper 26 over the first pattern relative to the stencil plate 16 (see col. 2, lines 63-65) for place said spheres into said through holes 18 onto the proximate surface of said substrate 4 (see Fig. 7-8).

As applied to each of claim 2-4 and 6 Kirby et al teach the spheres drop into and pass downwardly through the through holes by gravitation force as recited in claim 2 (see Figs. 7-8 which shows the solder balls is gravity feed into its mounting pads 8); and the recited limitations of claims 3-4 and 6 (see Figs 7-8, col. 4, lines 28-34).

As applied to each of claim 7-8, Kirby et al teach the stencil is being placed as a space apart from the substrate (see Figs 7-8).

Limitations of claims 19-21 and 23 are similar to that discussion in claims 2-4 and 6 as set forth above.

Art Unit: 3729

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5 and 22, as best understood are rejected under 35 U.S.C. 103(a) as obvious over Kirby et al (US 5,431,332).

As applied to each of claim 5, 22, Kirby et al as advanced above do not clearly teach the first pattern in which each of its holes diameter is greater than the diameter of each of the spheres by up to 1mm. With respect to the above. It would have been an obvious matter of design choice to choose any desired size, shape and configurations since applicant has not disclosed that the first pattern through hole greater than the diameter of each of the spheres by up to 1mm would solve any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the configurations as taught by Kirby et al (see Figs 7-8, that shows a loose fit between each of the spheres 30 and the associated first pattern holes 18).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Trinh whose telephone number is (703) 305-2887. The examiner can normally be reached on Monday -Thursday 8:00 am to 4:30 pm.

Art Unit: 3729

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (703) 308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7307 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

mt
November 8, 2002

A handwritten signature in black ink, appearing to read 'Peter Vo', with a long horizontal stroke extending to the right.

PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700